

SunSet xDSL MRD

DATE : 10/30/97

Revision: Draft 4

Section 4 Revision: Draft 1

Author: SK

Distribution: KC, PM, CP, TD, MM, CW, WC, RK, RC

Comments by
Paul Marshallput page numbers on
document**Section 4 User Interface:****4.1 Introduction Screen**

The MAIN MENU that is prevalent in all existing SunSets does not exist for the xDSL. There is simply an Introduction Screen which remains until the user presses a specific key. The Intro Screen also reappears when the user presses the ESC key enough times (dependent on the screen user is in).

Please refer to the xDSL Keypad Layout shown in Section 4.2

*Should always go somewhere where you can get something done at
the power up*

```

12345678901234567890123456789012
1 12:30:55 1
2
3
4 (Sunrise Logo Here)
5
6
7 SunWare
8 xDSL
9
0 Press AUTO Key for auto test
1 OR
2 Press appropriate key for
3 manual testing
4
5 Version 0.00 S/N 0001
6 SUNRISE TELECOM, Inc. 1997
12345678901234567890123456789012

```

INTRODUCTION SCREEN

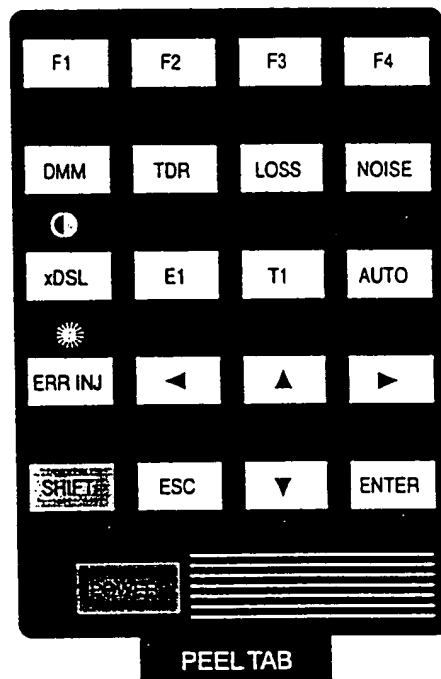
1. Always stays on until user presses a functionality key.
2. Also appears when user presses ESC key in any menu to get out of a certain function.
3. Note: AUTO Key will be developed in the future.

4.2 KEYPAD LAYOUT

xDSL KEYPAD LABEL rev 1 10/28/97

SUNRISE TELECOM, INC. SIZE: 3.279" X 2.226" .07"R

Notes: refer to sample for colors.



What are the LEDs?

4.3 Digital Multimeter Screens

When the User pushes the DMM key, the following screen appears :

DMM 1

```

12345678901234567890123456789012
1 12:30:55 1
2
3 DIGITAL MULTIMETER
4
5 SELECT METER:
6
7 DCV
8 ACV
9 DCA
0 ACA
1 OHM
2 CAP
3 DIODE
4 TWO SET TEST
5
6 12345678901234567890123456789012

```

This is the DMM Main Menu Screen.

1. From here, if the user presses the ESC key the INTRO Screen should appear.

*How does the user know which two conductors measurement is made on?
resistance s/b, measured tip/ring
tip/ground ring/ground*

The following are designs for the rest of the DMM screens:

DMM 2

```

12345678901234567890123456789012
1 12:30:55 1
2
3 DIGITAL MULTIMETER
4
5 METER: DCV
6
7
8 READING: 111.1 mV
9
0 (Note: Auto Range, so other possible readings are:
1 1.000 V, 10.00 V, 100.0 V)
2
3
4
5
6 12345678901234567890123456789012

```

DMM 3

```

12345678901234567890123456789012
1 12:30:55 1
2
3 DIGITAL MULTIMETER
4
5 METER: ACV
6
7
8 READING: 2.222 V
9
0 (Note: Auto Range, so other possible readings are:
1 40.00 V, 400.0 V)
2
3
4
5
6 12345678901234567890123456789012

```

DMM 4

12345678901234567890123456789012
12:30:55
DIGITAL MULTIMETER
METER: DCA
READING: 33.33 mA
(Note: Auto Range, so other possible readings are:
400.0 mA)

DMM 5

12345678901234567890123456789012
12:30:55
DIGITAL MULTIMETER
METER: ACA
READING: 44.44 mA
(Note: Auto Range, so other possible readings are:
400.0 mA)

DMM 6

12345678901234567890123456789012
12:30:55
DIGITAL MULTIMETER
METER: OHM
READING: 555.1 Ω
(Note: Auto Range, so other possible readings are:
4000 Ω , 40.00 k Ω , 400.0 k Ω , 4000 k Ω , 40.00 M Ω)

DMM 7

12345678901234567890123456789012
12:30:55
DIGITAL MULTIMETER
METER: CAP
READING: 5.555 nF
(Note: Auto Range, so other possible readings are:
50.00 nF, 400.0 nF, 5.000 uF, 50.00 uF)

DMM 8

12345678901234567890123456789012
12:30:55
DIGITAL MULTIMETER
METER: DIODE
READING: 2.222 V

DMM 9a

```
12345678901234567890123456789012
1                                     12:30:55 1
2
3      DIGITAL MULTIMETER
4      TWO SET TESTING
5
6 MODE: MEASURE, SLAVE
7
8
9
0
1
2
3
4
5
6
12345678901234567890123456789012
```

The DMM Two Set Testing is still in the planning stages. It is not crucial for the initial product release.

1. The idea is to have a second set provide the proper termination at the far end - open, short, term.
2. The "MEASURE" mode is the master unit. It performs measurements.
3. The "SLAVE" mode is the slave unit.

DMM 9b

```
12345678901234567890123456789012
1                                     12:30:55 1
2
3      DIGITAL MULTIMETER
4      TWO SET TESTING
5
6 MODE : MEASURE
7 METER: OHM, ACV
8
9 SLAVE LOAD: TERM, OPEN, SHORT
0 READING: 555.1  $\Omega$ 
1
2
3
4
5
6
12345678901234567890123456789012
```

DMM 9c

```
12345678901234567890123456789012
1                                     12:30:55 1
2
3      DIGITAL MULTIMETER
4      TWO SET TESTING
5
6 MODE: SLAVE
7 TERMINATION: OPEN, SHORT, TERM
8
9
0
1
2
3
4
5
6
12345678901234567890123456789012
```

4.4 TDR Screens

When the User pushes the TDR key, the following screen appears :

TDR 1

1	12345678901234567890123456789012	12:30:55	1
2			
3			
4	TDR <i>Feet Meters</i>		
5	UNITS : U.S., METRIC <i>U</i>		
6	MODE : AUTO, MANUAL		
7	GAUGE : 19 AWG, 22, 24, 26, 28		
8			
9			
0			
1			
2			
3			
4			
5			
6	START		
	12345678901234567890123456789012		

1. The User must first select desired units.
2. There are two modes: AUTO and MANUAL
3. For the AUTO mode, after entering the GAUGE, a START F4 key will appear. Pressing the "START" key will begin the test.

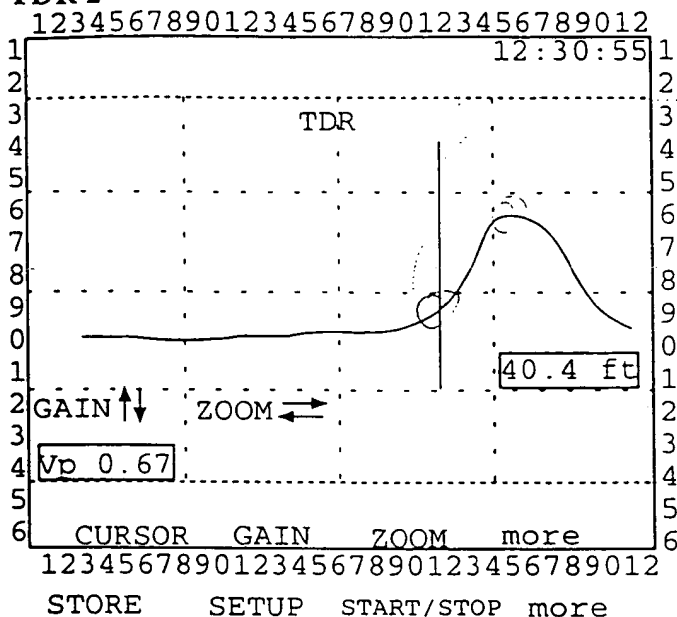
TDR 1a

1	12345678901234567890123456789012	12:30:55	1
2			
3	TDR		
4			
5	UNITS : U.S.		
6	MODE : MANUAL		
7	GAUGE : 19 AWG, 22, 24, 26, 28		
8	Vp : +.01, -.01, +.1, -.1		
9	PULSE : 20, 100, 470 ns, 1, 3, 5 uS		
0			
1			
2			
3			
4			
5			
6	START		
	12345678901234567890123456789012		

4. For the MANUAL mode, the Vp and PULSE fields appear.
5. For Vp, the User can increase or decrease the value in .01 or .1 increments between a range of (0.4 to 0.99)
6. For PULSE width, user can select among six selections. (Tektronix TS100 offers 4 choices).
7. After the PULSE width is selected, the "START" F4 key will appear. Pressing this key will begin the test.

*why should a user care?
Should it always be .99?*

TDR 2



6. The CURSOR can be accessed at any time by pressing the CURSOR F1 key or by pressing the ESC key from the GAIN or ZOOM mode.
7. If "MANUAL" mode was selected, then a SETUP F-key will be available. This provides access to the TDR 1A screen.
8. At any time, the pulse can be launched again by pressing the START/STOP Key.

Note: The dotted lines are for reference only

1. The "START" key from the previous screen leads to this screen. The pulse is launched immediately and the reflection is shown.
 2. The initial reflection should appear on Row 2, Column 4 whenever possible.
 2. The User has immediate control of the vertical line cursor, using the right/left arrow keys. A distance readout is displayed corresponding to the cursor position.
 3. The V_p is shown. *is this up or just V?*
 4. The GAIN can be changed by pressing the F2 key.
 - a. This activates the UP arrow and DN arrow keys for adjusting the GAIN control.
 - b. The GAIN \updownarrow will appear when F2 key is pressed, which alerts the user to use the up and down arrow keys.
 5. The ZOOM can be accessed by pressing the F3 key. The LEFT and RIGHT arrow keys are activated for ZOOM control.
 - a. The ZOOM \rightleftarrows will appear when F3 key is pressed, which alerts the user to use the LEFT and RIGHT arrow keys.
- How does it get out of these modes? Should they just be continuously active? How do you go from moving the cursor left/right to changing the zoom?*
9. The User has the option to store results by pressing the STORE F1 key.
 10. For the LABEL category, we need to implement soft key alphabet because no hard keys available.

1	12345678901234567890123456789012												1
2													2
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5	TDR MEASUREMENT - STORAGE												5
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5													

How do I go back from here to other screen?

4.5 LOSS Measurement Screens

When the User pushes the LOSS key, the following screen appears :

LOSS 1

```

12345678901234567890123456789012
1                                     12:30:55
2
3      LOSS MEASUREMENT
4
5      MODE: MEASURE, SEND
6      TONE: DMT, 10 kHz, 192 kHz,
7            256 kHz, 512 kHz,
8            1.1 MHz, ALL
9
10
11
12
13
14
15
16

```

This must be fast and accurate

Master Set

LOSS 2A

```

12345678901234567890123456789012
1                                     12:30:55
2 >                                     Idle <
3
4      LOSS MEASUREMENT
5
6      MODE: MEASURE
7      FREQUENCY: 192 kHz
8
9
10
11
12
13
14
15
16 CONNECT
12345678901234567890123456789012

```

1. MEASURE Mode is for the Master Unit
SEND mode is for the Slave Unit
2. The TONE is determined only by the MEASURE unit.
 - a. DMT is all 256 carrier freq.
 - b. ALL means 10, 192, 256, 512, 1.1 MHz.

*40 kHz - JS ON PART
772 kHz - T1*

Rather than doing master slave why not just cycle through the selected tones - Master & Slave need not communicate. The sender & receiver cycle through the selected frequencies. The Slave Set is for its start frequency, then go

LOSS 2B

```

12345678901234567890123456789012
1                                     12:30:55
2 >                                     Idle <
3
4      LOSS MEASUREMENT
5
6      MODE: SEND
7      FREQUENCY: 192 kHz
8
9
10
11
12
13
14
15
16 CONNECT
12345678901234567890123456789012

```

1. Notice Status Indication Area on Top right and left- Line 2.
 - a. It shows "Idle" right now
2. Either side can initiate the CONNECT F1 key. This establishes the connection between Master and Slave.

Master Set

LOSS 3A

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >                               Connecting< 2
3                                     3
4 LOSS MEASUREMENT 4
5                                     5
6 MODE: MEASURE 6
7 FREQUENCY:192 kHz 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

Slave Set

LOSS 3B

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >                               Connecting< 2
3                                     3
4 LOSS MEASUREMENT 4
5                                     5
6 MODE: SEND 6
7 FREQUENCY:192 kHz 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

LOSS 4A

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                               < 2
3                                     3
4 LOSS MEASUREMENT 4
5                                     5
6 MODE: MEASURE 6
7 FREQUENCY:192 kHz 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6 START 6
12345678901234567890123456789012
```

LOSS 4B

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                               < 2
3                                     3
4 LOSS MEASUREMENT 4
5                                     5
6 MODE: SEND 6
7 FREQUENCY:192 kHz 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

1. Pressing the START F1 Key initiates the test also

should start automatically after 3 secs

Master Set

LOSS 5A

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                        Testing< 2
3                                     3
4          LOSS MEASUREMENT          4
5                                     5
6          MODE: MEASURE              6
7          FREQUENCY:192 kHz          7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

LOSS 6A

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                        Complete< 2
3                                     3
4          LOSS MEASUREMENT          4
5                                     5
6          MODE: MEASURE              6
7          FREQUENCY:192 kHz          7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6          RESULTS  RESTART          6
12345678901234567890123456789012
```

1. RESULTS F-Key leads to RESULTS screen.

Results should automatically display when measurement is complete

Slave Set

LOSS 5B

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                        Testing< 2
3                                     3
4          LOSS MEASUREMENT          4
5                                     5
6          MODE: SEND                6
7          FREQUENCY:192 kHz          7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

LOSS 6B

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                        Complete< 2
3                                     3
4          LOSS MEASUREMENT          4
5                                     5
6          MODE: SEND                6
7          FREQUENCY:192 kHz          7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

4.6 NOISE Measurement Screens

When the User pushes the NOISE key, the following screen appears :

NOISE 1

```

12345678901234567890123456789012
1 12:30:55
2
3 NOISE MEASUREMENT
4
5 TYPE: S/N, WIDE QUIET
6 MODE: MEASURE, SEND
7 TONE: DMT, 10 kHz, 192 kHz,
8 256 kHz, 512 kHz,
9 1.1 MHz, ALL, WIDE BND
10
11
12
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16
12345678901234567890123456789012

```

1. User first designates Signal to Noise (S/N) or Wideband (WIDE) measurement.
2. MEASURE Mode is for the Master Unit
SEND mode is for the Slave Unit
3. The TONE is determined only by the MEASURE unit.
 - a.DMT is all 256 carrier freq.
 - b.ALL means 10, 192, 256, 512, 1.1 Mhz

only presented for S/N option
Define Filter dial for S/N measurement
various filters for QUIET measurement
WIDE BND means of Filter input 610 kHz to 4 mHz.

4.6.1 SIGNAL TO NOISE Measurement Screens

Master Set

Slave Set

S/N 2A

```

12345678901234567890123456789012
1 12:30:55
2 > Idle <
3
4 S/N MEASUREMENT
5
6 MODE: MEASURE
7 FREQUENCY: 192 kHz
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2222
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2240
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2249
2250
2251
2252
2253
2254
2255
2256
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2492
2493
2494
2495

```

Master Set

LOSS 7A

```

12345678901234567890123456789012
1                                     12:30:55
2 >Connected                         Complete<
3   RESULTS - LOSS MEASUREMENT
4 (kHz) (dBm) (kHz) (dBm)
5 192   17
6
7
8
9
0
1
2
3
4
5
6 PG-UP PG-DN GRAPH STORE
12345678901234567890123456789012

```

integrate these two screens

vu-store

4 lines of options

loss is measured in dB
power is measured in dBm

LOSS 8A

```

12345678901234567890123456789012
1                                     12:30:55
2   LOSS vs. FREQ
3   192 kHz
4   -17 dBm
5
6   40
7
8
9
0
1
2
3
4   550 Hz 1.1 MHz
5
6 ZM-IN ZM-OUT JUMP L JUMP R
12345678901234567890123456789012

```

Escape returns you to

5 lines of options

scroll LEFT RIGHT

1. The GRAPH function key leads to this screen.
2. JUMP L = Jump Left
JUMP R = Jump Right
 - a. These function keys control the cursor.
 - b. The readout is boxed above the graph
3. The first graph has range from 10 kHz to 1.1 Mhz
4. ZM-IN F-key zooms into narrow range. ZM-OUT F-key zooms back out.

Note: How many lines are possible? 60 to 70?
 This screen will be better defined later.

For DMT, make each Frequency a dot, no spaces in between, 32 x 6 = 192 dots total. Zoom out mode is each 2 frequencies. For 1 dot (192 dots total), the greater of the two loss values is displayed.

LOSS 9A

```

12345678901234567890123456789012
1                                     12:30:55
2
3   LOSS MEASUREMENT - STORAGE
4
5 No. DATE-YMD TIME-YMD LABEL
6 CUR 97-10-31 15:23:11 FREMONT 1
7 001 97-07-04 11:11:22 GOOD PAIR
8 002 97-07-04 10:21:54 BAD PAIR
9 003 97-06-02 22:22:31 UKIAH 1
0
1
2
3
4 VIEW      DELETE  STORE  more
5 LABEL     PRINT   CLR-ALL more
6 RESULTS  PAGE-UP  PAGE-DN more
12345678901234567890123456789012

```

1. The STORE function key leads to this screen.

4.6 NOISE Measurement Screens

When the User pushes the NOISE key, the following screen appears :

NOISE 1

1	12345678901234567890123456789012	12:30:55	1
2			
3	NOISE MEASUREMENT		
4	TYPE: S/N, WIDE QUIET		
5	MODE: MEASURE, <u>SEND</u>		
6	TONE: DMT, 10 kHz, 192 kHz,		
7	256 kHz, 512 kHz,		
8	1.1 MHz, ALL, WIDE BND		
9			
0			
1			
2			
3			
4			
5			
6	12345678901234567890123456789012		6

1. User first designates Signal to Noise (S/N) or Wideband (WIDE) measurement.
2. MEASURE Mode is for the Master Unit
SEND mode is for the Slave Unit
3. The TONE is determined only by the MEASURE unit.
 - a. DMT is all 256 carrier freq.
 - b. ALL means 10, 192, 256, 512, 1.1 MHz

only presented for S/N option
Define Filter diagram for S/N measurement
various filter for QUIET measurement
WIDE BND means 10 kHz to 4 MHz

4.6.1 SIGNAL TO NOISE Measurement Screens

Master Set

Slave Set

S/N 2A

1	12345678901234567890123456789012	12:30:55	1
2	>	Idle <	2
3			
4	S/N MEASUREMENT		
5	MODE: MEASURE		
6	FREQUENCY: 192 kHz		
7			
8			
9			
0			
1			
2			
3			
4			
5			
6	CONNECT		6
	12345678901234567890123456789012		

S/N 2B

1	12345678901234567890123456789012	12:30:55	1
2	>	Idle <	2
3			
4	S/N MEASUREMENT		
5	MODE: SEND		
6	FREQUENCY: 192 kHz		
7			
8			
9			
0			
1			
2			
3			
4			
5			
6	CONNECT		6
	12345678901234567890123456789012		

1. Notice Status Indication Area on Top right and left- Line 2.

a. It shows "Idle" right now

2. Either side can initiate the CONNECT F1 key. This establishes the connection between Master and Slave.

Master Set

S/N 3A

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >                               Connecting< 2
3
4 S/N MEASUREMENT
5
6 MODE: MEASURE
7 FREQUENCY:192 kHz
8
9
0
1
2
3
4
5
6
12345678901234567890123456789012
```

Slave Set

S/N 3B

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >                               Connecting< 2
3
4 S/N MEASUREMENT
5
6 MODE: SEND
7 FREQUENCY:192 kHz
8
9
0
1
2
3
4
5
6
12345678901234567890123456789012
```

S/N 4A

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                               < 2
3
4 S/N MEASUREMENT
5
6 MODE: MEASURE
7 FREQUENCY:192 kHz
8
9
0
1
2
3
4
5
6 START
12345678901234567890123456789012
```

S/N 4B

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                               < 2
3
4 S/N MEASUREMENT
5
6 MODE: SEND
7 FREQUENCY:192 kHz
8
9
0
1
2
3
4
5
6
12345678901234567890123456789012
```

just show the
result
say "MEASURING"
before result is ready
14/20
G

Master Set

S/N 5A

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                        Testing< 2
3                                     3
4 S/N MEASUREMENT                   4
5                                     5
6 MODE: MEASURE                     6
7 FREQUENCY:192 kHz                 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

S/N 6A

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                        Complete< 2
3                                     3
4 S/N MEASUREMENT                   4
5                                     5
6 MODE: MEASURE                     6
7 FREQUENCY:192 kHz                 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6 RESULTS RESTART                   6
12345678901234567890123456789012
```

just display
the results

Slave Set

S/N 5B

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                        Testing< 2
3                                     3
4 S/N MEASUREMENT                   4
5                                     5
6 MODE: SEND                       6
7 FREQUENCY:192 kHz                 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

S/N 6B

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                        Complete< 2
3                                     3
4 S/N MEASUREMENT                   4
5                                     5
6 MODE: SEND                       6
7 FREQUENCY:192 kHz                 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

show it
just have it
send continuous
until user escapes
out.

Master Set

S/N 7A

```

12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                         Complete< 2
3   RESULTS - S/N MEASUREMENT        3
4 (kHz)  (dB)      (kHz)  (dB)      4
5 192    32                5
6                                     6
7                                     7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6 PG-UP  PG-DN  GRAPH  STORE        6
12345678901234567890123456789012

```

S/N 8A

```

12345678901234567890123456789012
1                                     12:30:55 1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
7                                     7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6 ZM-IN  ZM-OUT  JUMP L  JUMP R      6
12345678901234567890123456789012

```

S/N vs. FREQ

192 kHz
- 32 dB

40

550 Hz

1.1 Mhz

1. The GRAPH function key leads to this screen.
2. JUMP L = Jump Left
JUMP R = Jump Right
 - a. These function keys control the cursor.
 - b. The readout is boxed above the graph
3. The first graph has range from 10 kHz to 1.1 Mhz
4. ZM-IN F-key zooms into narrow range. ZM-OUT F-key zooms back out.

Note: How many lines are possible? 60 to 70?
This screen will be better defined later.

S/N 9A

```

12345678901234567890123456789012
1                                     12:30:55 1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
7                                     7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4 VIEW      DELETE  STORE  more      4
5 LABEL     PRINT   CLR-ALL more      5
6 RESULTS   PAGE-UP PAGE-DN more      6
12345678901234567890123456789012

```

S/N MEASUREMENT - STORAGE

No.	DATE-YMD	TIME-YMD	LABEL
CUR	97-10-31	15:23:11	FREMONT 1
001	97-07-04	11:11:22	GOOD PAIR
002	97-07-04	10:21:54	BAD PAIR
003	97-06-02	22:22:31	UKIAH 1

UNIFY

13'20

4.6.2 WIDEBAND NOISE Measurement Screens

When the User pushes the NOISE key, the following screen appears :

NOISE - WB 1

```

12345678901234567890123456789012
12:30:55
1
2
3 NOISE MEASUREMENT
4
5 TYPE: S/N, WIDE
6
7 MODE: MEASURE, SEND
8
9 TONE: DMT, 10 kHz, 192 kHz,
10      256 kHz, 512 kHz,
11      1.1 MHz, ALL
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
12345678901234567890123456789012

```

1. User designates Wideband Noise (WIDE) for TYPE.
2. MEASURE Mode is for the Master Unit
SEND mode is for the Slave Unit
3. For TONE, only selection is DMT

Master Set

WB 2A

```

12345678901234567890123456789012
12:30:55
1
2 > Idle <
3
4 WIDEBAND NOISE MEASUREMENT
5
6 MODE: MEASURE
7 FREQUENCY: DMT
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26 CONNECT
12345678901234567890123456789012

```

Slave Set

WB 2B

```

12345678901234567890123456789012
12:30:55
1
2 > Idle <
3
4 WIDEBAND NOISE MEASUREMENT
5
6 MODE: SEND
7 FREQUENCY: DMT
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26 CONNECT
12345678901234567890123456789012

```

This is a S/N measurement

1. Notice Status Indication Area on Top right and left- Line 2.
a, It shows "Idle" right now
2. Either side can initiate the CONNECT F1 key. This establishes the connection between Master and Slave.

Master Set

WB 3A

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >                               Connecting< 2
3                                     3
4 WIDEBAND NOISE MEASUREMENT 4
5                                     5
6 MODE: MEASURE 6
7 FREQUENCY: DMT 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

WB 4A

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                               < 2
3                                     3
4 WIDEBAND NOISE MEASUREMENT 4
5                                     5
6 MODE: MEASURE 6
7 FREQUENCY: DMT 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5 START 5
6                                     6
12345678901234567890123456789012
```

Slave Set

WB 3B

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >                               Connecting< 2
3                                     3
4 WIDEBAND NOISE MEASUREMENT 4
5                                     5
6 MODE: SEND 6
7 FREQUENCY: DMT 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

WB 4B

```
12345678901234567890123456789012
1                                     12:30:55 1
2 >Connected                               < 2
3                                     3
4 WIDEBAND NOISE MEASUREMENT 4
5                                     5
6 MODE: SEND 6
7 FREQUENCY: DMT 7
8                                     8
9                                     9
0                                     0
1                                     1
2                                     2
3                                     3
4                                     4
5                                     5
6                                     6
12345678901234567890123456789012
```

Master Set

WB 5A

```
12345678901234567890123456789012
1 12:30:55
2 >Connected Testing<
3
4 WIDEBAND NOISE MEASUREMENT
5
6 MODE: MEASURE
7 FREQUENCY: DMT
8
9
0
1
2
3
4
5
6
```

WB 6A

```
12345678901234567890123456789012
1 12:30:55
2 >Connected Complete<
3
4 WIDEBAND NOISE MEASUREMENT
5
6 MODE: MEASURE
7 FREQUENCY: DMT
8
9
0
1
2
3
4
5
6 RESULTS RESTART
```

ac immediately
to results

Slave Set

WB 5B

```
12345678901234567890123456789012
1 12:30:55
2 >Connected Testing<
3
4 WIDEBAND NOISE MEASUREMENT
5
6 MODE: SEND
7 FREQUENCY: DMT
8
9
0
1
2
3
4
5
6
```

WB 6B

```
12345678901234567890123456789012
1 12:30:55
2 >Connected Complete<
3
4 WIDEBAND NOISE MEASUREMENT
5
6 MODE: SEND
7 FREQUENCY: DMT
8
9
0
1
2
3
4
5
6
```

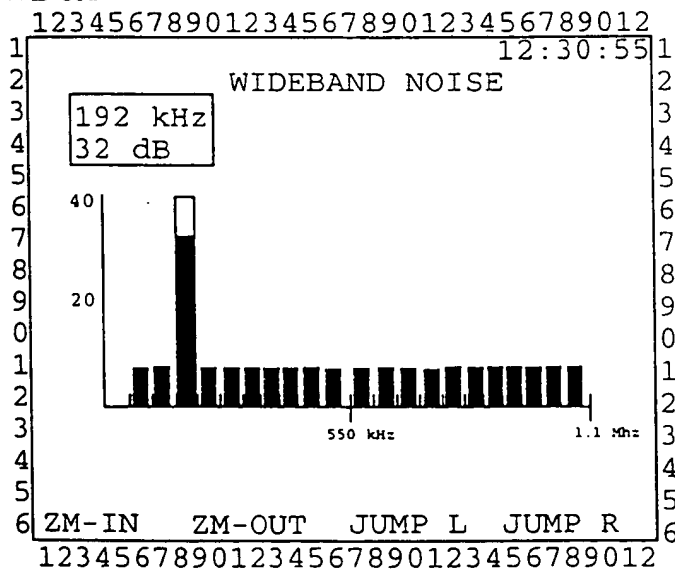
Keep stepping
through freqs
til test escapes

Master Set

WB 7A

12345678901234567890123456789012												123456789012											
												12:30:55											
RESULTS - WB MEASUREMENT																							
(kHz)				(dB)				(kHz)				(dB)											
10	5			54	5																		
14	6			58	6																		
18	5			62	5																		
22	6			66	6																		
26	5			70	5																		
30	6			74	6																		
34	5			78	5																		
38	6			82	6																		
42	5			86	5																		
46	6			90	6																		
50	5			94	5																		
PG-UP				PG-DN				GRAPH				STORE											
12345678901234567890123456789012																							

WB 8A



1. The GRAPH function key leads to this screen.
2. JUMP L = Jump Left
JUMP R = Jump Right
 - a. These function keys control the cursor.
 - b. The readout is boxed above the graph
3. The first graph has range from 10 kHz to 1.1 Mhz
4. ZM-IN F-key zooms into narrow range. ZM-OUT F-key zooms back out.

Note: How many lines are possible? 60 to 70?
This screen will be better defined later.

WB 9A

12345678901234567890123456789012												12:30:55											
WB MEASUREMENT - STORAGE																							
No. DATE-YMD TIME-YMD LABEL																							
CUR 97-10-31 15:23:11 FREMONT 1																							
001 97-07-04 11:11:22 GOOD PAIR																							
002 97-07-04 10:21:54 BAD PAIR																							
003 97-06-02 22:22:31 UKIAH 1																							
VIEW DELETE STORE more																							
LABEL PRINT CLR-ALL more																							
RESULTS PAGE-UP PAGE-DN more																							
12345678901234567890123456789012																							